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5,399,352 3/1995 Hanson ..... 623/1

FOREIGN PATENT DOCUMENTS

8203764 11/1982 WIPO ..... 623/1

OTHER PUBLICATIONS

U. Sigwart, M.D., J. Puel, M.D., V. Mirkovitch, M.D., F. Joffre, M.D., and L. Kappenberger, M.D., "Intravascular Stents to Prevent Occlusion and Restenosis After Transluminal Angioplasty", The New England Journal of Medicine, No. 12, vol. 316, 701-706, Mar. 19, 1987.

Eric J. Topol, M.D., "Textbook of Interventional Cardiology", vol. 2, Second Edition, 687-704, 712-715, 727-730, 742-745, 754-761, and 803-815, 1994.

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[57] ABSTRACT

In accordance with the present invention, a novel composite prosthesis comprises a vein and a cylindrical-shaped member. The vein is a vein segment removed from a patient and the cylindrical-shaped member, preferably an expandable stent, is glued, sutured, or in some other fashion affixed to the outside surface of the vein. The vein segment of the combination is referred to as a vein graft or vein implant to distinguish it from the vascular structure into which it is inserted as a part of the combination. This composite prosthesis is then introduced inside a body passageway, such as diseased arterial segment or inside a saphenous vein graft segment which by-passes an arterial segment. It may be introduced by placement over a balloon catheter. When the balloon is inflated the stent and vein graft expand. The stent prevents recoil and keeps the vein graft tissue in place, while the vein graft forms a new inner lining for the vessel. It is preferred that the vein graft portion of the composite prosthesis be the patient's own vein.

21 Claims, 5 Drawing Sheets

